Institutional Administration

Dedicated Revolving Loan Fund for Environmental Project

Summary: Got a good idea and looking for funding? To finance environmentally and economically beneficial projects, Harvard University created the Green Campus Loan Fund, a $3,000,000 interest-free revolving loan fund designed as a financial incentive for green projects. Funds became available in January 2002. Since then, more than $1.7 million has been committed to 18 projects. The idea for the fund originated with the Vice President of Facilities who knew of the prior success of a similar fund (from 1993 – 1998) and saw the need for additional financial incentives for building managers. Professional management under the Harvard Green Campus Initiative (HGCI) has brought the concept to fruition.

Project Goals

- Initiate a revolving loan fund.
- Award interest-free financing to approved projects.
- Facilitate communication among, and between, empowered individuals concerned with reducing the University's environmental impacts
- Publicize and sustain the effort.

Description

The loan fund was designed to (1) motivate faculty and staff to engage in actions to minimize the environmental impacts of the University; (2) remove an excuse or impediment (e.g., lack of funding) for beneficial projects with longer-term paybacks; and (3) facilitate the peer-to-peer education opportunities that compliment many of the innovative projects financed through the fund.

Pre-Project Considerations

- What successes and failures occurred with the prior revolving loan fund, or with prior efforts to spur faculty, staff or students to pursue environmental projects?
- What is the best approach for developing faculty and staff allies?
- Is there competent staff to manage the fund, provide technical assistance and assist with project development?
- What other organizational impediments for sustainability projects might exist that would make it difficult to fully utilize the fund?

Campus Profile

Harvard University
Cambridge, MA
FT Undergrads: 6,700
FT Grad Students: 11,900
FT Faculty/Staff: 10,000+
GSF of buildings: ~ 20 million
Annual Operating Budget: ~1.8 Billion

Green Activities
The Harvard Green Campus Initiative (HGCI) is a university-wide collaborative effort between faculty, administrators, staff and students with the goal of reducing the environmental impacts of campus operations and promoting environmental sustainability. HGCI is one of many campus organizations, departments and groups contributing to the greening of Harvard University. The Environmental Business Council of New England has recognized the University and its Environmental, Health and Safety Department for its leadership.

Steps Taken

1. In 1999, an interfaculty advisory committee was established by the Harvard University Committee on the Environment to address the challenge of environmental sustainability in campus operations. It was chaired by faculty at the School of Public Health and the vice-president for Facilities and Environmental Services.
2. In 2000, Leith Sharp became Director of "Greening the Crimson" which was later changed to the "Harvard Green Campus Initiative" or HGCI.
3. In 2001, the offices of the President and the Provost established the Green Campus Loan Fund (GCLF) to finance environmentally and economically beneficial projects throughout the University based on the recommendation of the HGCI and the Harvard Green Campus Interfaculty Advisory Committee.
4. HGCI hired staff, including a Loan Fund Coordinator, and began to partner with various University Departments and faculties.
5. Policies, procedures and guidance for the administration of the fund were developed.
6. Project eligibility requirements were developed.
7. Tools were developed to assist project teams, such as submittal forms and a clear project evaluation methodology.
8. The GCLF program was promoted and opportunities were sought for investments in sustainability projects with ROIs of less than five years (e.g., one of the evaluation criteria).
9. Identified and sought faculty, staff and student champions.
10. Project interns were hired.
11. Needs analyses were provided to assist in identifying opportunities; promoted a system of reinvestment through savings produced.
12. Accountability was ensured through on-going monitoring and use of performance measures.
13. Self-management of projects, by users, was promoted.
14. Modifications to the program and policies were made, as appropriate. For example, the policy on energy efficiency projects was modified to allow any rebate money to be used to pay down a loan.

Participants

The GCLF is administered by the HGCI, with support and guidance provided by a cross-faculty/department Advisory Committee. In addition to representatives from the HGCI, this committee includes members with expertise in, and responsibility for, engineering and utilities, environmental, health and safety, operations, finance and administration, and maintenance. Projects have taken place, or have been approved, at the following Schools and Departments, as of April 2003.

Harvard Business School (7)
Harvard Planning and Real Estate (4)
Harvard Medical School (2)
University Dining Services (1)
Radcliffe (1)
University Operations Services (1)
University Libraries (1)
Graduate School of Education (1)

Projects rely on a mix of faculty, student, interns, staff, consultants and vendors. Building managers are key allies.

Sustainability Financial Savings

Performance and Benefits

Based on the first 15 months, the HGCI office anticipates future annual savings of $509,058 from:

- $410,296 from saved energy costs
- $47,583 from saved water costs
- $43,179 from avoided operations and maintenance (O & M) costs
- $8,000 from avoided waste management and disposal costs.

Benefits of Projects

Annual kWh savings: 4,222,579

Annual Steam MMBtu savings: 3,520

Annual Natural Gas Therm Savings: 61,076

Annual CO2 reductions: 7,700,000 pounds

Annual water reductions: 5,293,168 gallons

Annual Waste Disposal Reduction: 200,000 pounds

Project Examples

- The Harvard Business School (HBS) is installing a 75kW Tecogen cogeneration system that will produce electricity and heat (for space and water heating).
- The HBS is upgrading its irrigation controls and management to the Rainbird Maxicom II system, a computerized irrigation management system, that uses on-site weather and soil condition monitoring stations to determine watering needs
- The HBS is replacing its blue outdoor security lights from 52-watt incandescent fixtures to 2.6 watt LED lights.
- The HBS is upgrading a building from recessed incandescent to compact fluorescent bulbs and is installing light sensors in student breakout study rooms in another building.
- At the Medical School, they are replacing incandescent and compact fluorescent exit signs with electroluminescent exit signs that require less than 1 watt of electricity and are expected to be maintenance free for 30 years.
- The Medical School has installed a vending efficiency control device on all of its cold beverage and snack vending machines that cuts energy use by as much as 50%.
- In the School of Faculty, Arts and Sciences, the Computer Energy Reduction Program aims at promoting efficient computer power management behaviors (and energy efficient computer purchasing practices)
- Renovations to a large kitchen and service area in Dining Services included a shift from electric kettles to steam kettles, including a new TroughVeyor dishwashing system with water capture and recovery.

Lessons Learned

- Early engagement and pre-screening is a critical component of success. Initiate conversations with interested parties early in the process because it takes time to lead a good project idea to a complete and successful submittal.
- Don’t allow the loan fund to be seen as the only financial tool available. The loan fund should be presented as one of many incentives or tools available to support the achievement of environmental and economic goals.
- Make sure the program is administratively easy to use, and ensure that the program is well known at the faculty, staff and student levels.
- Work with department financial managers to understand how and if they can use utility savings as a mechanism for loan repayment from an administrative/accounting perspective.
- Make available competent staff, or monies for consultants or feasibility studies, to address the excuse “We don’t know what opportunities exist.”
- Manager the projects with professional staff.
- Memorialize and document the projects so that past performance and lessons learned can be remembered.
- Facilitate peer-to-peer interaction and education through Best Practice Exchange Forums.
- Fund a mix of projects. One of the larger projects—computer energy management – is completely a behavioral change project and is not tied to building or physical infrastructure issues.

For Further Information and Resources

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Check out www.greencampus.harvard.edu

The article "Economic Incentives for Sustainable Resource Consumption at a Large University: Past Performance and Future Considerations," published in the International Journal of Sustainability in Higher Education Vol 1., No. 3, 2000, pp 252-266 (http://www.emerald-library.com) reviews the use of a revolving loan fund at Harvard from 1993 – 1998.

Other Revolving Loan Programs or Resources

A dedicated fund for environmental initiatives is a relatively new idea in the University sector. Yale University initiated a $1 million revolving loan fund in early 2003. Other institutions have recently contacted Harvard and are assessing the practice.

Commentary

A dedicated revolving loan fund can be a mechanism for simultaneously promoting economic and environmental sustainability. Sometimes what is good for the environmental is also good for the bottom line. For many institutions, $3 million is a significant amount of money to contribute to any fund – but, in this case, such a designation of financing promotes multiple agendas – facility and campus infrastructure improvements, environmental accountability and wise financial investment. Investing in projects with relatively fast paybacks (i.e., less than five years) that generate ongoing utility savings is not only a great way to ensure a 20% plus Return on Investment – but also a wise way to hedge against anticipated increases in future utilities. Consider starting a fund with an amount that makes sense for your institution. Try to make the fund large enough to support projects that will result in meaningful financial savings. If the program advances all the agendas described above, you will be in a strong position to argue for additional funding from the administration or from potential donors.